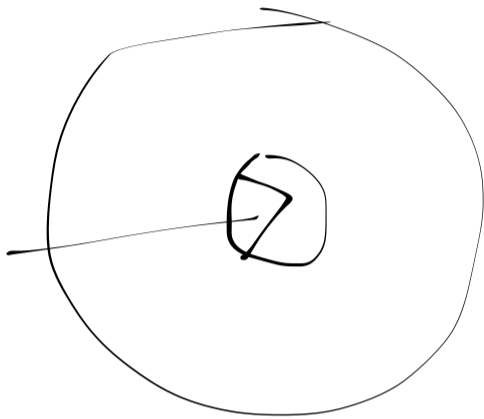


Aug 26 Block 5

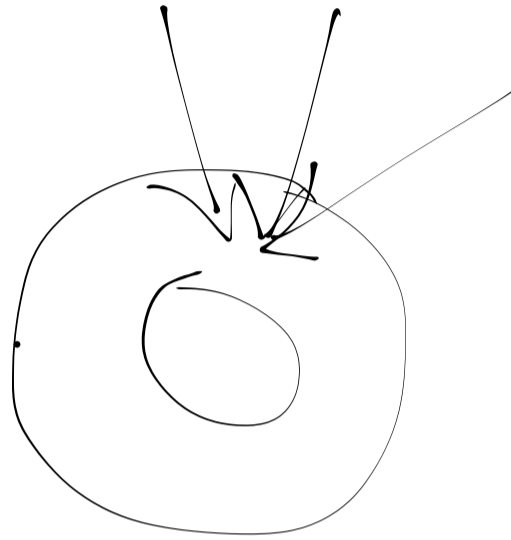
precision - how well can we repeat a measurement

how many places can we make in a measurement

more graduations (markings) = greater precision

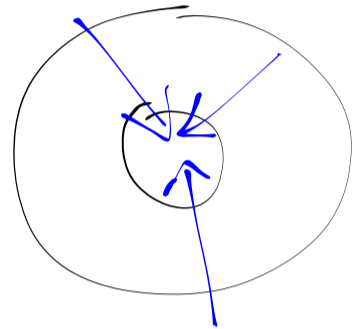


acc? Y



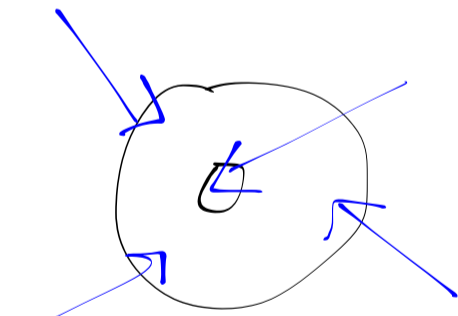
acc? N

prec? Y



acc? Y

prec? Y



prec? N

we use significant figures to

communicate the precision of our measurements

use ^{places} digits we measure, + an estimate

Significant digit rules

1. non zero digits are significant

1 2 3 4 ... 9

123 3 sf
4.5 2 sf

Zeros

2. zero between other sf, are significant

1 0 2 3 sf

3 0 0 4 4 sf

3. leading zeroes are NOT sig. 0.789 3 sf

0.011 2

0.0203 3 sf

trailing zeros

4. after decimal ARE significant 1.0 2 sf

0.200 3 sf

5. before decimal may be significant
ambiguous

1000

1.000×10^3 4 sf

1.00×10^3 3 sf

1.0×10^3 2 sf

1×10^3 1 sf

Sig figs in mult + div.

your answer has the same # of sf's
as the factor w/ fewest sf's

$$17 \div 3 = 5.6666\bar{6}$$

2 1 1

6

addition & subtraction

line up #'s like 4th grade - on decimal
round answer to column of least precision

$$\begin{array}{r} 99.1 \\ + 0.8 \\ \hline \end{array}$$

$$\begin{array}{r} 98 \\ - 0.5 \\ \hline 98.5 \end{array}$$